

27820

Medical Biofilm Techniques

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Daily staff:

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Practical information

- Experiments and talks
 - Short 10 min intro every day before the first lab session
- Work in the lab
 - Lab coats
 - Waste
- Talks (almost) every day, Be there in time. All talks will be in this room
- Project presentations (your own projects “at home”)
- Presentations at the last day
 - Treat data/results on the way so that you just have to put everything together in the end
- The wiki page
 - Schedule for the different experiments
 - List of speakers
 - Laboratory manuals and protocols
 - The flow systems
 - Additional protocols
 - Accompanying papers
- Valuables
- Teams
- Coffee / Tea / Lunch

The different exercises

- **5 different biofilm systems are going to be set up:**
- System 1: Development and architecture of *E. coli* biofilms
- System 2: FISH in biofilms (*P. aeruginosa* and *Acinetobacter* variants)
- System 3: Differentiation, structure development and colistin tolerance in *P. aeruginosa* biofilms
- System 4: *P. aeruginosa* mutants structure development and resistance
- System 5: Free Exercise
- Diagnostics
- Additionally:
 - The biofilm protocol
 - The FISH protocol
 - Adhesion assay
 - Conjugation/plasmid transfer
 - MIC determinations
 - Cell sorting (demo)
 - Quorum Sensing assays

Tuesday program

Tuesday 13/8:

- 9:00 The exercises and practical information.
- **Technical Talk: Janus Haagensen and Claus Sternberg: Biofilms and tools, confocal microscopy, and Imaris.**
- **Janus Haagensen: Introduction to ex 1 and 3. Video intro to biofilm assembly.**
- **11:00 Talk: Anders Folkesson: Biofilm formation and antibiotic tolerance: is there a connection?**
- 12:00 Lunch. (*Lunch is on your own all days, except in the weekends where a sandwich lunch is provided*).
- 1:00 Building Biofilm setups (All in all we will work on 5 systems during the course, each team of 3 will be responsible for 1 system with respect to media preparation and waste removal, all teams will work on all systems)
- Medium preparation for all biofilm systems.
- **3:00 Fatima Yousef and Janus Haagensen: Intro to ex 3 and 4.**
- The free exercise: Sampling of bacteria from your own chosen environment (contact lenses, soil, plants etc). Isolation of bacteria/plating and incubation at different temperatures.
- 4:00 Inoculation of already prepared and sterilized system 1 and 3.
- 5:00 End of day 1

The Flow Chamber System

**The standard set-up
at DTU for hydro-
dynamic biofilm
development.**

**The flow-cells are
mountable directly
on the Confocal
Microscopes for in
situ investigations
(Zeiss LSM510
or Leica DMRXA)**

